

Peak to Valley Weather

The Official Newsletter of the National Weather Service Grand Junction

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Fall/Winter 2013



New TAF Sites are Coming!

Tom Renwick, Senior Forecaster

For those not in the aviation community, Terminal Aerodrome Forecast, or TAF, is a concise forecast of expected meteorological conditions at an airport during a specified period (24 to 36 hours). In other words, it's a weather forecast for an airport.

Your Grand Junction Weather Forecast Office currently produces TAFs for the following airports: Grand Junction Regional Airport, Garfield County Regional Airport, Eagle County Airport, Aspen-Pitkin County Airport, Montrose County Airport and the Vernal Regional Airport in Utah. Starting Wednesday, November 20 at 5 p.m., TAFs will also be produced for the Canyonlands Field Airport near Moab, UT, the Durango-La Plata County Airport and the Telluride Regional Airport. Why? Simple. Our office received requests from either the airlines, or the airfield managers themselves, for TAF support.

"TAFs would greatly reduce this uncertainty while also saving money and countless man-hours."

The reasons for TAF support vary, but the common theme is that TAF support from the Grand Junction office will improve service provided to

these airports, whether it's for general aviation, commercial flights, pilots, passengers, or other members that work in flight operations. TAF support from our office will also lower flight cancellations.

Kip Turner, Director of Aviation at Durango Airport put it this way, "I have noticed that most of our cancellations are based on dispatch decisions before the aircraft departs the hub airport. These dispatch

decisions are frequently rooted in uncertainty about the weather situation here in Durango. TAFs would greatly reduce this uncertainty while also saving money and countless man-hours."

While most people think of the National Weather Service as only producing forecasts and weather watches and warnings, we also help the aviation community. Currently, we're increasing this support for three additional airports. For any questions about our aviation support, please contact Tom Renwick at Thomas.renwick@noaa.gov. By click [here](#), you can also see our current TAFs.



There is no such thing as bad weather, only different kinds of good weather.

John Ruskin

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National Award Presented for 40+ Years of Weather Observations

John Kyle, Data Acquisition Program Manager

Congratulations to our 2013 Cooperative Observer award winners!

Beth and John Sundberg, of Hayden, Colorado, were awarded the Thomas Jefferson award this summer. Grand Junction NWS staff had the privilege of personally presenting the award to them on



L to R: Ben Moyer (Metorologist-in-Charge), John and Beth Sundberg, Becky Klenk (Hydrometeorological Technician), John Kyle (Data Acquisition Program Manager)

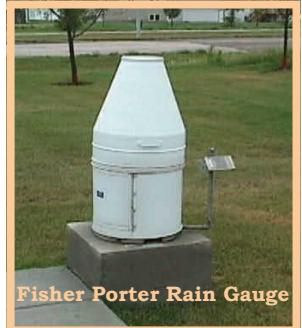
September 26, 2013 at the United Congregational Church of Christ in Hayden. The Sundberg's received the most prestigious award given to cooperative observers. Only five awards, out of over 11,000 volunteer observers nationwide, were presented this year. They have been observing temperatures, precipitation and snow, from their residence in Hayden, since 1972 and have taken approximately 15,000 observations over a span of 41 years!

In support of U.S. Forest Service activities, the Sundberg's weather data has provided valuable information to federal land management agencies for use in evaluating and improving grazing strategies on local and national rangelands. Their observations have continued unfettered in extended periods of perilous weather. An example of this was during a three-day winter storm in early November 1973 when over 30 inches of snow fell. The reports from that time were detailed with notes like, "33.6 in. of snow, 71 1/2 hours without stopping", and they estimated the hours of precipitation during the night, and observed hours during the day.

The National Weather Service's Cooperative Weather Observer Program has given scientists and researchers continuous observational data since

the program's inception more than a century ago. Today, some 11,700 volunteer observers participate in the nationwide program to provide daily reports on temperature, precipitation and other weather elements such as snow depth, river levels and soil temperature.

"Cooperative observers are the bedrock of weather data collection and analysis," said Ben Moyer, Meteorologist-in-Charge in Grand Junction. "Numerous technological breakthroughs have brought great benefits to the Nation in terms of better forecasts and warnings. Without the century-long accumulation of accurate weather observations taken by volunteer observers, scientists could not begin to adequately describe the climate of the United States. We cannot thank the Sundberg's enough for their years of service to America."



Fisher Porter Rain Gauge

Photo: NWS

The first extensive network of cooperative stations was set up as a result of an 1890 act of Congress that established the U.S. Weather Bureau. Many of the stations have even longer histories. John Campanius Holm's weather records, taken without benefit of instruments in 1644 and 1645, are the earliest known recorded observations in the United States.

Many historic figures have maintained weather records, including Benjamin Franklin, George Washington and Thomas Jefferson. Jefferson maintained an almost unbroken record of weather observations between 1776 and 1816. Washington took weather observations until just a few days before he died. The Jefferson and Holm awards are named for these weather observation pioneers.



The colored boxes in the diagram to the left represent **Volunteer Cooperative Observer Sites** throughout the Grand Junction Weather Office's County Warning Area

Recognition for Outstanding Performance and Taxpayer Cost Savings

Ben Moyer, Meteorologist-in-Charge

Isaac M. Cline had a lengthy career in the U.S. Weather Bureau, distinguished by his innovative forecasting, and his development of dissemination techniques, combined with outstanding public service efforts. The most noteworthy and most difficult time of Mr. Cline's career came during the Galveston hurricane of 1900, the deadliest weather event in the history of the United States. His acute understanding of concurrent weather conditions, his advance predictions, and his heroic forecast and hurricane warnings saved several thousand lives.

The NWS Isaac M. Cline Awards were established to identify and recognize operational excellence of line employees in the delivery of products and services supporting and enhancing the achievement of NWS strategic and operating plans. Isaac Cline's long and distinguished career makes the use of his name appropriate for an award of which any National Weather Service employee could be proud.

Due to repeated Automated Surface Observing System (ASOS) Ice Free Wind Sensor failures, Mike Martinez and Bill Beagley performed detailed troubleshooting and testing which resulted in the discovery of faulty calibration equipment, changes in calibration software previously unknown to the National Weather Service Training Center (NWSTC) and NWS Headquarters ASOS Program, and ultimately a change in calibration procedures and new preventive maintenance checks. Mike and Bill worked with NWSTC and NWS Headquarters to validate new procedures that would ensure proper maintenance of Ice Free Wind Sensors. This activity had a national impact on the ASOS program, will prevent future unneeded sensor downtime and loss of data, and will result in significant cost saving in preventing erroneous replacement of working sensors.

In addition to this outstanding ASOS work, and despite a lack of formal training in troubleshooting and repair of the NEXRAD Powerware Transitional Power System (TPS), Mike and Bill willingly spent several days troubleshooting and replacing components to restore the TPS to proper operation. This activity prevented additional effort and money spent to go through the contracting process for a Powerware contractor to be on site longer than necessary. In addition, this repair and detailed tuning and maintenance resulted in the KGJX



L-R: Ben Moyer, Meteorologist-in-Charge, Mike Martinez-Electronic Technician, Bill Beagley-Electronic Technician

Photo: Ian Fox

WSR-88D NEXRAD radar Dual Polarization upgrade to begin occurring as scheduled and completed ahead of schedule. Their significant efforts saved not only considerable additional contracting cost, but any cost associated with rescheduling our dual polarization upgrade. The radar was returned to service more quickly than expected during western Colorado's wettest time of year, enabling NWS forecasters, and users alike, access to important precipitation monitoring information.

These accomplishments are remarkable considering Mike and Bill were also able to complete all other preventative maintenance, as well as calibration or repairs on 10 ASOS sites, upper air Console Replacement System, and other duties on time and on schedule during a time when the electronics division at WFO Grand Junction was not fully staffed. Congratulations on many jobs well done!

Weather Education Through Innovation with Social Media

Matt Alekса, Meteorologist Intern and Mike Meyers, Science and Operations Officer

With the recent involvement of the National Weather Service in social media, the Grand Junction Weather Forecast office began employing YouTube to provide many MultiMedia Weather Briefings (MMWB) for upcoming and ongoing storm events impacting eastern Utah and western Colorado. Learn more at our [Grand Junction YouTube](#) page.

In late April, the National Weather Service office in Grand Junction received a request from a fifth grade class in Cortez, Colorado to provide a presentation about weather impacts during



the American Revolution and what caused various types of weather. Considering travel restrictions in place at the time, we decided to access YouTube and the MMWB format to provide these presentations. The Science and Operations Officer, Dr. Mike Meyers, recorded three presentations on the science of cloud and precipitation formation. Matthew Alekса, a Meteorologist Intern, researched and provided a video about the weather during the American Revolution and how weather impacted various battles and the outcome of the war.

This example illustrates the many valuable ways YouTube or social media can be utilized to provide decision support and weather education during challenging federal government budget times. These videos can be viewed on our YouTube channel, under the [“Science Briefings” playlist](#).

Social Media: Impressive Growth Locally, Nationally

Travis Booth, Meteorologist Intern

Have you found the NWS Grand Junction on social media yet? Nearly 2,000 people and organizations are directly plugged into our office [Facebook](#), [Twitter](#), and [YouTube](#) pages as fans/followers/subscribers. This number is nearly two million across the entire National Weather Service!

Growth of the NWS Grand Junction social media sites has been impressive with our Facebook fans doubling during the past 12 months, while our Twitter followers have increased sevenfold over the past six months!

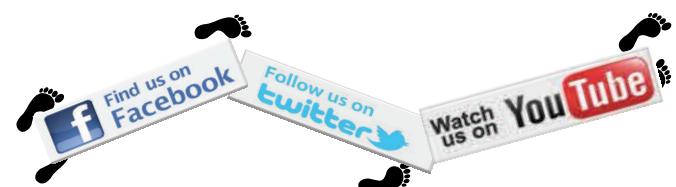
In February 2013, we began producing occasional **MultiMedia Weather Briefings** to place on our YouTube page with nearly 7,000 views so far. As you can see, social media has turned into a great supplemental channel for us to disseminate weather/climate information and promote weather safety awareness activities.

We enjoy using our office social media pages as a way to interact with our users, allowing us to improve our services. Fans/Followers/Subscribers of our sites are encouraged to ask questions or write comments, post weather related pictures, and report significant weather.

Unfortunately, we may not be able to answer questions and comments at times due to significant

weather, so we do appreciate your patience. However, we will be monitoring the page for weather reports or photos you may post.

If you would enjoy receiving our weather “heads up” and interacting with some of the office meteorologists, please “like”, “follow”, and “watch” us on your favorite social media outlet!



**COLORADO AND UTAH
WINTER WEATHER
PREPAREDNESS WEEK
OCTOBER 20-26**

Weather Support During the 2013 Pro Cycle Challenge

Jim Pringle, Warning Coordination Meteorologist

As part of the National Weather Service (NWS) mission to provide weather information to support the protection of life and property, forecasters from the Grand Junction, Boulder, and Pueblo forecast offices provided weather support, also known as Decision Support Services (DSS), for emergency services personnel during the 2013 Pro Cycling Challenge in Colorado.

The DSS provided by forecasters included a daily weather forecast presented during each day's pre-race Emergency Operations Center briefing, as well as timely updates on potentially hazardous weather during each leg of the 7-day race. Fortunately, the weather during the 2013 Pro Cycling Challenge was mostly benevolent for race participants and spectators, with only a few afternoon showers and thunderstorms.



Photo: Chris Graythen/Getty Images

Wacky Weather 2013



January - tied for the 5th coldest month on record in Grand Junction
(average temperature was 14.3 degrees)



June - appeared to be the driest June across the County Warning Area (eastern Utah and western Colorado) in recent history



September - as of 9/27/2013, 3rd wettest September on record, 8th wettest month on record in Grand Junction. Continuation of above normal rainfall for the first half of October.



September 22 - Largest hailstones documented in La Plata county; tennis ball size (2-1/2 inches) in Grand Junction



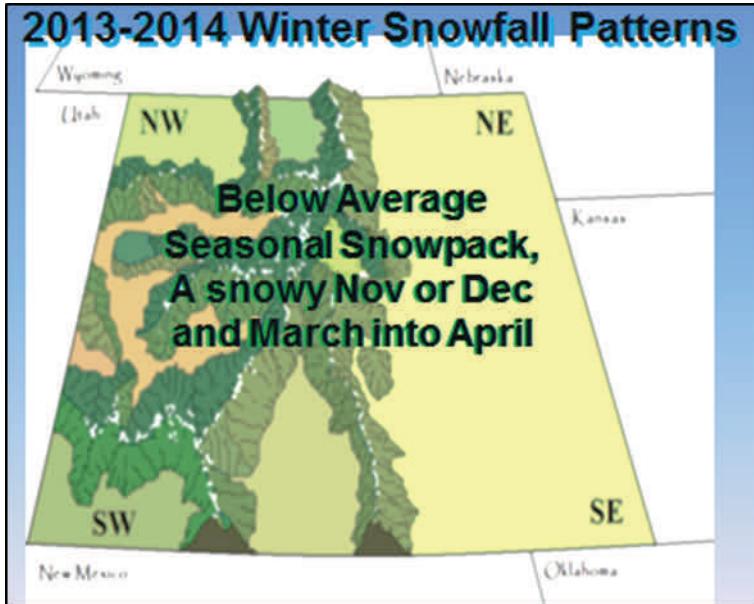
October 3 - 2nd earliest measurable snowfall on record; record low temperature of 31 degrees F. in Grand Junction

Winter Outlook a Wild Card Season

Joe Ramey, Meteorologist

This time of year climatologists look to the state of the oceans for clues to the cold season storm track and intensity. The most effective winter outlook tool is the El Nino Southern Oscillation (ENSO). This year is neither El Nino, the warm phase, nor La Niña, the cold phase.

Temperatures in the equatorial eastern Pacific are in a neutral phase. Last winter, too, was a Neutral year. In fact, there have been 19 Neutral winters since 1950. Looking at snowfall for selected sites in the Colorado Mountains, an average of those 19 years comes in below normal. Even analyzing different subsets (included in the linked



presentation), of those 19 years that may apply to this year, all seem to come in below normal. Unfortunately there are four seasons in our list of Neutral winters that came in extremely dry: 2003-2004, 2001-2002, 1980-1981, 1962-1963. However, there are exceptions to that trend with two extremely snowy seasons in our list of Neutral winters: 1996-1997 and 1992-1993.

Even under the best conditions, winter outlooks are low confidence forecasts, but ENSO Neutral seasons are truly wild card seasons. To view a more detailed local analysis (a 4.5 MB pdf file) for the winter outlook, [click here](#).

Kudos to Storm Spotters

Jim Pringle, Warning Coordination Meteorologist

During the past summer season, many trained storm spotters, including [Skywarn](#)® mobile storm spotters, and emergency managers, provided timely reports of significant and severe weather events to our forecasters. Those reports of flash flooding, large damaging hail, debris flows, and strong winds resulted in improved warning decisions by our forecasters. Our forecast office also received photos and videos of the weather events, which was also greatly appreciated.

As we head into the winter season we are looking forward to receiving timely “ground truth” reports of winter weather events to again help us with our warning decisions. As a volunteer storm spotter, you do not have to always be available to report, though we would like to hear from you when you are able to report a significant weather event. Click on [Spotter Checklist](#) to see the types of weather events to report. If you would like to be a volunteer storm spotter, please send your request to webmaster@noaa.gov.



Photos, from a distance (R) and close-up (L), of a supercell thunderstorm in northwest Montezuma County, CO on September 17, 2013 with a well-defined wall cloud and tail cloud. This thunderstorm produced golf ball size hail and heavy rainfall.



Photos: Vandy Brinlee

Seasonal Changes and Fall/Winter Precipitation Measurements

Jim Pringle, Warning Coordination Meteorologist

Wedge Rain Gauges

With the advent of autumn, it is time to make sure that wedge rain gauges are not left outside when temperatures are expected to drop below freezing. Wedge gauges will split at the bottom if water is allowed to freeze in them.



Four-inch Gauges

Those with the four-inch cylindrical rain gauges should remove the inner tube and funnel when freezing temperatures become likely. The nice thing about the four-inch gauge is that the primary four-inch tube is sufficiently sturdy to remain outside throughout the winter.



Photos: CoCoRaHS



The Grand Junction forecasters need your rainfall and snowfall measurements. We very much appreciate the daily reports. However, during heavy snowfall, heavy rainfall, or hail events, **real-time reports** are particularly important to our warning operations. To find out how to join our volunteer storm spotter network, please contact our forecast office at 970-243-7007 or send your request to webmaster@noaa.gov.

You may have noticed that the CoCoRaHS icon and link were recently added to the home page of our website. The purpose of doing that is to encourage more people to participate in CoCoRaHS, since the daily precipitation reports from volunteer CoCoRaHS observers is becoming increasingly important in forecast office operations, as well as warning verification, climatology, and storm summaries.

If you are already registered as a CoCoRaHS observer, we encourage you to take the observations and send in your reports whenever possible. If you would like to join CoCoRaHS, we want you to know that it usually only takes about five minutes each day to take the measurement and send in your report online via the CoCoRaHS website.

One of the goals of CoCoRaHS is to have as dense of a reporting network as possible. The number of CoCoRaHS observers is increasing in some communities. Unfortunately, there are still many towns and large rural areas within eastern Utah and western Colorado where there are no CoCoRaHS observers. Take a look at the CoCoRaHS website map of daily reports within your state and you will see where there is a dire need for CoCoRaHS observers.



www.cocorahs.org

During the past couple of years, CoCoRaHS has been encouraging teachers across the United States to have their schools join CoCoRaHS. This can be an excellent hands-on learning experience for students to better understand weather and climate. The expense for participation is minimal; simply the cost of a four-inch rain gauge. Go [here](#) for more information about utilizing CoCoRaHS for education.

Training presentations on measuring rain, snow, and snow water equivalent can also be found on the [CoCoRaHS website](#).

If you have any questions about CoCoRaHS, please contact your county CoCoRaHS coordinator. You can also contact the eastern Utah and western Colorado coordinator, Jim Pringle, at james.pringle@noaa.gov

National Weather Service Observes Week of Community Service Locally

Matt Alekса, Meteorological Intern

Adopt-a-Lake Cleanup on the Grand Mesa

On Saturday, September 21, 2013 seven employees from the National Weather Service (NWS) office in Grand Junction, Colorado and their families headed up to the Grand Mesa to participate in the bi-annual Adopt-a-Lake cleanup, which is sponsored by the U.S. Forest Service.

The Adopt-a-Lake program was established to help keep our lakes clean and preserve the natural beauty of the landscape. The Grand Mesa is home to many recreational activities such as hiking, biking, camping, fishing, and skiing. The Adopt-a-Lake cleanup is a great way to provide a service to our community by cleaning up three of the 300 plus lakes on the Grand Mesa, just before the mountain snowpack starts building.

The staff split into two groups (one at Kitson Reservoir and the other at Twin Lake 1 and then met up to finish Twin Lake 2. Collectively, we were able to scour the perimeters of all three lakes and collect an assortment of trash, including a muffler, stuffing 10 trash bags provided by the U.S. Forest Service.

It was a beautiful fall day with temperatures in the 50s and sunny skies at an elevation just over 10,000 feet above sea level where some of the aspen trees displayed their golden colors. This act of service was one of the many ways local NWS employees reach out to their community beyond the office doors.



Full group at Twin Lake Left to Right: Ben Moyer (MIC) and family, Ian Fox, Joe Ramey, Jim Daniels and family, Bill Beagley and family, Matt Alekса and family, Jim Pringle (WCM)



Half the group at Kitson Reservoir from Left to Right: Ian Fox, Bill Beagley and family, Matt Alekса and family, Joe Ramey (at bottom in front of sign)

Photos: Ian Fox

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Say what?the

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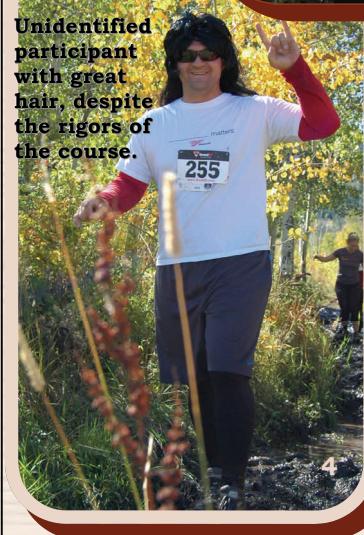
and Color Sunday Adventure Challenge!

Some of the staff and their families from the Grand Junction Weather Forecast Office contributed in the National Weather Service Week of Service by participating and helping with the Color Sunday Adventure Challenge held at Powderhorn Mountain Resort, above Mesa, Colorado on Sunday, September 29. The event benefited the Western Slope Center for Children (non-profit organization which provides services and support for child sexual abuse victims and their families) and the Powderhorn Racing Club (non-profit youth ski program).

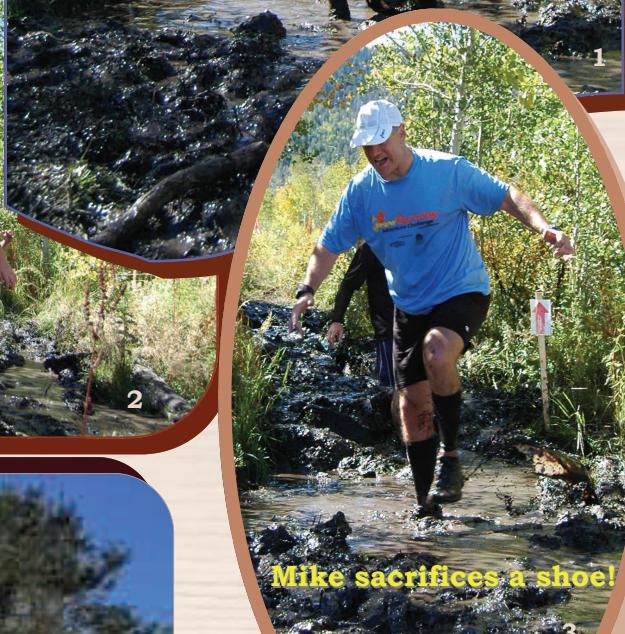
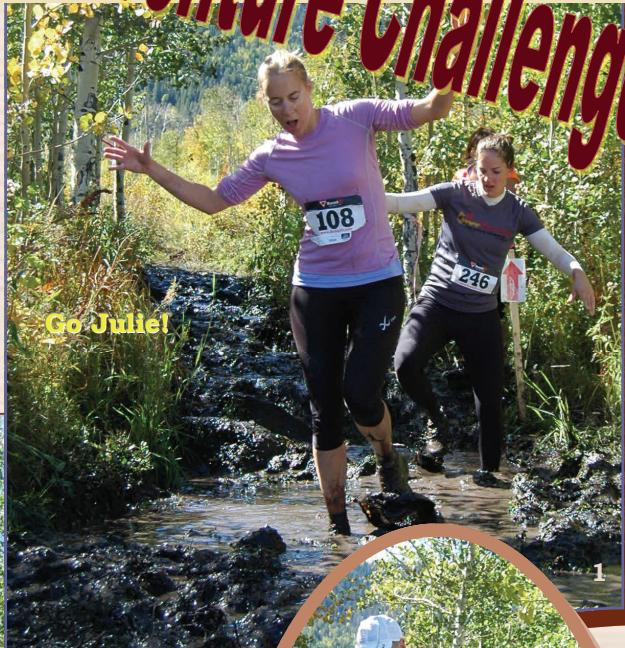
**Ben and crew
plow through**



**Unidentified participant
with great hair,
despite the rigors of
the course.**



Photos: 1-4 Ian Fox; 5-6 Deborah C.



And they're off!

